

Important Advances in Clinical Medicine

Epitomes of Progress—Ophthalmology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in ophthalmology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in ophthalmology which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Ophthalmology of the California Medical Association and the summaries were prepared under its direction.

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Diagnostic Ophthalmic Ultrasonography

DIAGNOSTIC ULTRASONOGRAPHY, of great value in clinical ophthalmology, is used frequently to differentiate intraocular lesions, particularly in cases of retinal detachment, tumor or vitreous hemorrhage. When the posterior segment cannot be seen because of corneal opacity, cataract or a miotic pupil, ultrasound testing provides the most dependable method for investigation. Contact B-scan units are more practical for posterior segment pathology; however, the lens, iris and ciliary body can be studied by holding the transducer in a water bath placed over the eye. The B-scan device provides a visible cross-section of the eye that is helpful in orientation, and the A-scan unit gives additional details of tumors and assists in the differential diagnosis of retinal detachment and vitreous membranes. Both A-scan and B-scan ultrasonographic units are highly reliable in diagnosing intraocular tumors.

A-scan and B-scan ultrasonography is useful for detecting and localizing foreign bodies. However, in some cases where the foreign body is small or located near the scleral wall, the findings may

not be conclusive. Therefore, standard x-ray views of the eye and orbit should be obtained if a foreign body is suspected, and, in many cases, the traditional method of x-ray localization is still indicated.

B-scan ultrasound testing is of remarkable value with cystic orbital lesions such as mucocoeles and dermoids. A-scan and B-scan ultrasonography can also be very useful in cases of endocrine exophthalmos, where enlargement of the extraocular muscles is frequently found. Pseudotumor and other solid orbital tumors can be detected with A-scan and B-scan ultrasound testing. Recent refinements of computed tomography—both computed axial tomography (CAT) and computed coronal tomography (CCT), have established that this latter technique is of greater value in demonstrating some orbital tumors. Standardized A-scan ultrasound testing, however, can be of more assistance in determining the type of tumor once the size and location are known.

A-scan ultrasound equipment has been designed and calibrated for the accurate measurement of axial lengths to calculate lens power. Measurements are made by photographing the A-scan with a superimposed scale that is calibrated in micro-